

The Examiner has rejected claim 8 based on the Nakayama et al. patent and the Brown et al. patent in view of the Hof et al. United States Patent {not cited by number} Regarding Claim 8 the applicant maintains that as Nakayama et al. patent and brown et al. patent are deficient that any of the Hof et al. United States Patents {hereinafter the Hof et al. patents) have no bearing on the Claim 8.

The Examiner has rejected claims 15 through 22 inclusive as being obvious from Brown et al. patent. Claims 15 through 22 recite a variety of ratios relating to the dimensions of the device claimed therein. The device of claims 15 through 22 inclusive is a strip of material. It has been determined that the device should have the recited dimensions as the strips may otherwise have a tendency to warp or pull away from the container surface on which the strip is placed. If the strip pulls partially away from the container surface a false reading may result and the device is then useless. None of the references have recognized the device dimensions as being of any importance let alone describing the dimensions of the device.

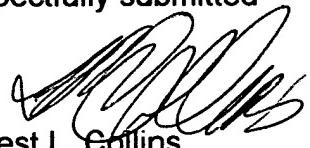
As the Brown et al. patent does not disclose introducing carbon dioxide while drawing out beer (a carbonated fluid) from the sealed container (keg) one skilled in the art would need to determine the effects of such an omission. If one draws out the beer from the sealed keg the carbon dioxide in the remaining beer will have a greater volume available and the carbon dioxide will exit the beer into the head space of the keg. The head space of the keg should then have foaming occur above the liquid surface of the beer. As the foam is neither purely carbon dioxide nor liquid beer the foam will have its own heat transfer characteristics. Depending on the sensitivity of the temperature measuring device and the heat transfer characteristics of the foam false readings may occur giving an incorrect volume reading. The applicant's claims 1 through 3 inclusive, claim 6, claim 8, claim 10, claim 11, claim 13 and claim 14 all recite the introduction of carbon dioxide to maintain the liquid in the container under pressure and such teachings cannot be gleaned from Brown et al. patent.

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An early Notice of Allowance is earnestly solicited. The Examiner is urged to call the undersigned concerning any unresolved issues resulting from this response.

Respectfully submitted



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification

Paragraph beginning at page 8, line 7, has been amended as follows:

Figure [FIGURE] 1 is a partial cross-sectional perspective view showing a first embodiment of a beer keg of the invention;

Paragraph beginning at page 8, line 9, has been amended as follows:

Figure [FIGURE] 2 is a longitudinally cross-sectional view showing a beer keg having draft beer in the beer keg;

Paragraph beginning at page 8, line 11, has been amended as follows:

Figure [FIGURE] 3 is a view showing a beer keg;

Paragraph beginning at page 9, line 2, has been amended as follows:

In Figure [FIGURE] 1, a beer keg 1 according to a first embodiment of the invention is shown. The beer keg 1 is generally cylindrical.

Paragraph beginning at page 9, line 4, has been amended as follows:

As shown in Figure [FIGURE] 2, the beer keg 1 is a container made of thin stainless steel plate, and having a mouthpiece 2 and a bottom. The beer keg 1 is prepared by welding an inner cylinder upper plate 3, the outer cylinder shell 6, and an outer cylinder lower plate 9.

Paragraph beginning at page 9, line 8, has been amended as follows:

The outer cylinder shell 6 is in a cylindrical form and is integrally sealed, at its upper and lower edges with the inner cylinder plate 3 and the outer cylinder plate 9, respectively, by TIG welding. In this embodiment, the mouth piece 2 is mounted on the center of the inner cylinder plate 3. A down tube 13 shown in Figure [FIGURE] 3 is inserted into the beer keg 1 through the mouth piece 2.

Paragraph beginning at page 9, line 27, has been amended as follows

As shown in Figure [FIGURE] 1, a plurality of thermometric measuring devices 12 are provided on the outer cylinder shell 8. The thermometric measuring devices 12 are designated as 12 A, 12 B, 12 C, and 12 D. The thermometric measuring devices

12 are so designated by the appended letter to show the location on the keg outer cylinder 6.

Paragraph beginning at page 11, line 10, has been amended as follows

In a brewery, there is a line where a beer keg 1 incorporated with the down tube 13 is automatically washed and draft beer is automatically filled in the beer keg 1. Similarly, the beer keg 1 of the present invention is automatically washed and filled with draft beer by using the above-mentioned line. The beer keg 1 filled with the draft beer is stored in a refrigerator for shipping to forcibly cool beer in the beer keg 1 through the face Cz. In shipping, as shown in Figure [FIGURE] 3, the upper face of the inner cylinder upper plate 3 of the beer keg 1 is covered with an adiabatic mat 14 to keep low temperature. The beer keg 1 is kept in a proper standing posture, so that temperature of draft beer filled in the beer keg 1 does not substantially rise due to the fact that draft beer is heat-insulated by the vacuum layer between the beer keg 1 and the outer cylinder shell 8. After the beer keg 1 of the present invention is supplied to and stored in a tavern, beer is kept cool in a refrigerator in an inverted posture or horizontal posture. Draft beer is cooled through the face Cz of the inner cylinder upper plate 3, so that the draft beer can be effectively forcibly cooled.

Paragraph beginning at page 15, line 6, has been amended as follows

The products that are placed in sealed containers such as the beer keg 1, according to the present invention, are preferably intended for use at less than 100 pounds per square inch [to] at 70 degrees Fahrenheit. Preferably, the products in the sealed containers according to the present invention are pressurized between 5 and 90 pounds per square inch, or preferably between 10 and 80 pounds per square inch at 70 degrees Fahrenheit.

Paragraph beginning at page 10, line 3, has been amended as follows:

Several eutectic materials are disclosed in United States Patent 4,362,645 that issued to Hof, et al. December 7, 1982 as well as the remaining cited Hof, et al. patents. Similar eutectic materials may be formulated from foregoing disclosures to

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provide a suitable temperature range for determining the temperature within a container such as a beer barrel.

In the Claims:

Claim 1 has been amended as follows:

Claim 1 (Amended) A method for determining the level of a carbonated fluid in a container comprising:

obtaining a container having an outlet for a first carbonated fluid and an inlet for introducing carbon dioxide [a second fluid];

said container having a first carbonated fluid region therein;

a first carbonated fluid being present at an original level in said first carbonated fluid region of said container;

said container, for when in use, having said first carbonated fluid at least partially removed from said container while introducing carbon dioxide to said container thereby forming a second carbonated fluid region;

placing on at least one exterior surface of said container at least one temperature-measuring device;

at least one said temperature-measuring device being located in a region of said container where said second carbonated fluid region is formed by removal of said first carbonated fluid;

initially observing a first temperature in said first carbonated fluid region of said container when said first carbonated fluid is present in said first carbonated fluid region of said container;

subsequently observing a second temperature in said second carbonated fluid region of said container after a portion of said first carbonated fluid has been removed; and,

correlating the difference between said first temperature and said second temperature to the level of said first carbonated fluid in said container.

2. The method for determining the level of said first fluid in said container according to claim 1 wherein said first fluid is at least partially withdrawn through said outlet between the time of observing said first temperature and said second temperature.

3. The method for determining the level of said first fluid in said container according to claim 1 wherein the second fluid is introduced through said inlet between the time of observing said first temperature and said second temperature.

Claim 4 has been cancelled without prejudice.

4. The method for determining the level of said first fluid in said container according to claim 1 wherein said second fluid is a gas.

Claim 5 has been cancelled without prejudice.

5. The method for determining the level of said first fluid in said container according to claim 1 wherein said second fluid is a gas.

6. The method for determining the level of said first fluid in said container according to claim 1 wherein said temperature-measuring device is adhered to an outer surface of said container as a magnetic strip.

Claim 7 has been cancelled without prejudice.

7. The method for determining the level of said first fluid in a container according to claim 1 wherein a plurality of temperature-measuring device are sequentially located in the regions of said container where said second fluid region is formed by removal of said first fluid.

8. The method for determining the level of said first fluid in a container according to claim 1 wherein at least one temperature-measuring device is a eutectic temperature-measuring device.

Claim 9 has been cancelled without prejudice.

9. The method for determining the level of said first fluid in said container according to claim 1 where said container is present in a location of low humidity at the time of the initial observing of the first temperature in said first fluid region of said

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container when said first fluid is present in said first fluid region of said container and at the time the subsequent observation of the second temperature in said second fluid region of said container after a portion of said first fluid has been removed.

Claim 10 has been amended as follows:

Claim 10 (Amended) The method for determining the level of said first fluid in said container according to claim 1 [9] wherein said container is in a refrigerator.

11. The method for determining the level of said first fluid in said container according to claim 1 wherein said first fluid is a liquid.

Claim 12 has been cancelled without prejudice

12. The method for determining the level of said first fluid in said container according to claim 1 wherein said first fluid comprises beer and wherein said second fluid comprises carbon dioxide.

Claim 13 has been amended as follows:

Claim 13 (Amended) The method for determining the level of said first fluid in said container according to claim 1 additionally comprising the step of wiping the temperature-measuring device with a water moistened cloth wherein the temperature of the water moistened cloth is less than 105 ° F.

14. The method for determining the level of said first fluid in said container according to claim 1 wherein the pressure within said container at 70 ° F is about 5 pounds per square inch to about 100 pounds per square inch.

15. A temperature-measuring device mounted on a magnetic strip said temperature measuring device having a width, a height, and a thickness, provided further that the dimensionless ratio of said width to said height is about 0.5 to about 10 to about 1 to about 5.

16. The temperature-measuring device according to claim 15 wherein the dimensionless ratio of said width to said height is about 0.7 to about 10 to about 1 to about 4.

Claim 17 has been amended as follows:

Claim 17 (Amended) The temperature-measuring device according to claim 15 wherein said device measures temperatures in the range of about 34 ° F to about 94 ° F.

18. The temperature-measuring device according to claim 15 wherein said device measures temperatures in the range of about 34 ° F to about 86 ° F.

19. A temperature-measuring device mounted on an adhesive strip said temperature measuring device having a width, a height, and a thickness, provided further that the dimensionless ratio of said width to said height is from about 0.5 to about 10 to about 1 to about 5.

20. The temperature-measuring device according to claim 19 wherein the dimensionless ratio of said width to said height is about 0.7 to about 10 to about 1 to about 4.

21. The temperature-measuring device according to claim 19 wherein said device measures temperatures in the range of about 34 ° F to about 94 ° F.

22. The temperature-measuring device according to claim 19 wherein said device measures temperatures in the range of about 34 ° F to about 86 ° F.

Claim 23 has been amended as follows:

Claim 23 (Amended) A fluid dispensing assembly comprising:  
a sealed container, for when in use, containing a liquid under pressure;  
said sealed container having an outlet for a first carbonated fluid and an inlet for introducing carbon dioxide  
said sealed container having an exterior surface;  
said exterior surface of said sealed container having a heightwise dimension and a widthwise dimension;  
at least one temperature-measuring device positioned heightwise dimension on said exterior surface, provided further that said temperature-measuring device measures temperatures in the range of about 34 ° F to about 94 ° F.

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24. The temperature-measuring device according to claim 23 wherein said device measures temperatures in the range of about 34 ° F to about 80 ° F.

25. A flexible band temperature-measuring device capable of determining a 2° F temperature change in the range of about 34 ° F to about 94 ° F.

26. The flexible band temperature-measuring device according to claim 25 wherein said device measures temperatures in the range of about 34 ° F to about 80 ° F.

Cancel claim 27 without prejudice.

27. A device comprising a series of at least two substantially parallel strips having temperature-measuring capability.

Cancel claim 28 without prejudice.

28. The temperature-measuring device according to claim 27 wherein the said at least two substantially parallel strips are affixed to a flexible band.

Cancel claim 29 without prejudice.

29. The temperature-measuring device according to claim 28 wherein there are at least four substantially parallel strips.

Cancel claim 30 without prejudice.

30. The temperature-measuring device according to claim 30 wherein the at least two of the substantially parallel strips provide a discernible color change at least 15 ° F apart.

Add the following new claim 31.

New Claim 31. A method for determining the level of fluid in a container comprising:

obtaining a container having an outlet for a first fluid and an inlet for a second fluid;

said container having a first fluid region therein;

a first fluid being present at an original level in said first fluid region of said container;

said container, for when in use, having said first fluid at least partially removed from said container thereby forming a second fluid region;

placing on at least one exterior surface of said container at least one single thermometric temperature-measuring device;

at least one said single thermometric temperature-measuring device being located in a region of said container where said second fluid region is formed by removal of said first fluid;

initially observing a first temperature in said first fluid region of said container when said first fluid is present in said first fluid region of said container;

subsequently observing a second temperature in said second fluid region of said container after a portion of said first fluid has been removed; and,

correlating the difference between said first temperature and said second temperature to the level of said first fluid in said container.

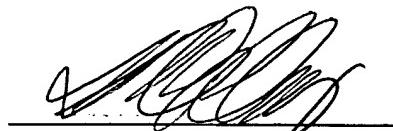
Add the following new claim 32.

New Claim 32. The method for determining the level of said first fluid in said container according to claim 31 additionally comprising the step of wiping the temperature-measuring device with a water moistened cloth wherein the temperature of the water moistened cloth is less 105 ° F.

Add the following new claim 33.

New Claim 33. The method for determining the level of said first fluid in said container according to claim 31 wherein the pressure within said container at 70 ° F is about 5 pounds per square inch to about 100 pounds per square inch.

I hereby certify that this document is being deposited with the United States Postal Service on this date 7 May 2003 in an envelope as First Class mail with sufficient postage affixed addressed to the: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450



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